

responding movements in the gray matter of the brain; coming along different isolated fibers, and to different cells, this admits of comparison of the impressions as is the case with photographs taken from slightly different directions for the stereoscope.

At this point the statement of fact will bear repetition, that this most delicate and complex organ, a city of nerves and cells, has been traced along its march of development from the primitive slime, and that in the human foetus, the nervous system begins to form as a spinal cord; later a vesicle arises at the head, becomes a cell, a ganglion, and finally through ascending stages, that which we see it at birth,—still requiring several decades of use to reach full adult maturity.

The brain cells, built up to their present highly unstable and sensitive state, manifest their life energy in the form of consciousness and thought, when stimulated to action through external or internal causes; and by reason of the natural properties they possess, and through forces that are essentially of the same nature of, and correlated with mechanical, electrical and chemical forms of force. This action, like muscular action, exhausts, and a large supply of blood is required to replenish the waste. It is estimated that the brain uses a third of the blood supply of the whole body, and the greater the mental work the greater the amount of blood required. The changes resulting from mental activity, taking place in the substance of the brain-cells and nerve-fibers, the breaking down and building up of the plasma of the cells, requires a constant supply of new material to rebuild as in all other cells, and these metabolic changes are going on while the brain is active and must be proportional to that activity.

The sum of the physical forces used in the mental

process is the exact measure of the mental work. Force can never be destroyed, but as the physical energy in the brain disappears it manifests itself in the form of vital force in the phenomena of digestion, muscular action, thought, etc.

The time required for a sensation to pass along a nerve has been proven by experiment to be about 90 feet per second. A fraction of a second is also required for the brain to act. This fact shows its kinship with the different forms of force.

When the finger is pricked, there is of course an actual alteration of the delicate matter in the core of the nerve-fibers of that member. The impression is transmitted through the molecules in a wave of force. It reaches the brain cells and produces corresponding molecular changes there. These changes of the microscopic brain substance constitute a memory record. If the injury is repeated, the law of least resistance applies and the sensation passes along the same track.

The oftener this is repeated the more enduring will be the memory of it. Later, some similar event occurs, and the same molecular action in the brain cells is induced, which constitutes a recollection or memory of this event. The more frequently this action is repeated,—from either external or internal stimulation, the more permanent is the impression, and the more important does it seem to us. This is the case with all impressions whether subjective or objective. Nearly allied objective and subjective impressions, thus contiguous and perhaps overlapping or overlying each other in the brain substance are often mistaken—the one for the other. This fact explains much superstitious belief. Persons think they see or hear a miracle or ghost when the impression comes from a record in their own minds. It is



therefore sometimes difficult to distinguish a thought from an object.

The brain is really a double organ, and when one side of it acts an instant quicker than the other, we have no way to judge of the length of time, and from the double sensation get the idea that we have seen the same thing before,—possibly years before. This accounts for some of the superstitions. They can all be explained on natural principles.

When the brain becomes stored with an indefinite number of impressions, in different cells and centers, when one is brought up, others which are adjacent or connected with it are set in motion, or brought up, so that in determining choice of action they are necessarily compared with each other and reasoned upon.

Each train of thought is preceded by either contemporaneous or memory impressions. We have, on all subjects, definite relations mentally as well as physically, with the matter and forces of the Universe, and the relation is so close at every point that the obvious explanation is that we are integral parts of it.

The will to act, and the reasons determining the choice of action, arise from the brain action as indicated, and primarily from necessity for food and self-preservation. These are the requirements resulting from the property of motion possessed by Protoplasm. The supply of food is a requisite of continued motion, heat and life, and is the main incentive of all organic activity. Without the chemical action by which food is changed and digested there could be no will or thought. Like the *Amœba*, a renewal of energy gives pleasure and hope and we extend our mental pseudopodia and branch out in new enterprises ; while on the other hand exhaustion brings depression and pain and we assume

the resting stage. That which we call will-power is the consciousness of the effort made to follow these conditions.

Where climatic conditions require that a supply of food be stored, as is the case with squirrels and men, memory teaches in relation to the food supply, that adequate provision must be made for future contingencies ; and this requires a speculative reasoning that easily leads upward to the highest intellectual attainments. It must be remembered that in this respect considerable start must have been made in high latitudes very early in pre-historic times. There has been ample time for an exceedingly slow evolution of the higher mental qualities. Fortunately we are able to contrast savage tribes now living with civilized peoples as well as to trace intellectual development along its slow and tortuous track in historic times.

Sensation, consciousness, reason, all the mental qualities, may be considered as much properties of the matter called Protoplasm, when subjected to favorable conditions, as fluidity and crystallization in six-sided forms are of water, or heat, light, electricity, molecular motion and chemical affinity are of matter under other conditions.

We are all the better able to understand the living universal matter—because we are ourselves a part of it. In the past men have “strained at gnats and swallowed camels.” They have ignored probabilities and been misled by their desires. The cry of new-born truth has been drowned in the deafening uproar of the conflict of the creeds. At last men are learning that the natural explanations are the true ones.

Man has exalted himself too much ; he stands physically and mentally lineally connected with the lower



animals. He has their physical nature and mental qualities. The lowest man is intellectually on the same plane with the highest brute. Learned elephants, apes, horses, dogs, and cats are the intellectual peers of the islanders who cannot count, eat each other, are afraid of the dark, have a language of only a dozen or so sounds, and, as Alfred R. Wallace says in his *Malay Archipelago*, have a religion that consists principally of a "disgust at pork."

Men have all the qualities, good, bad, and indifferent, of all the brutes. There is little use of going through the catalogue; let each man analyze his own propensities.

Is he braver than the lion? more crafty than the cat? more cautious than the fox? more cruel than the tiger? more patient than the horse? more trusty than the dog? more timid than the gazelle? more mild than the lamb? more revengeful than the hyena? more loving than the dove? more selfish than the hog? Can he not beat any other animal at his own game? He has memory and reason; so have they. They have instinct; so has he. All belong to the same type of organisms, and are the output of the same evolutionary movement,—branches of the same ancestral tree.

The mental qualities of man and the lower animals being the same in kind, and differing only in degree, any attempt at drawing a dividing line is arbitrary and unnatural. To assert that only man has an immortal soul that will enjoy or suffer an eternal conscious individual existence, is to deny the same property to kindred animals that are unquestionably kinder, wiser and better than some men. The desire of salvation, and precedence for themselves, is so strong among some theological tinkers, that they become blind to the absurdities



of their beliefs. Each dreamer is pretty sure to always include himself, "his son John and his wife," among those elected to be saved. Some with commendable caution draw the line at the imaginary point where the ape ends and man begins. Others scarcely less cautious draw a distinction where there is no difference, and condemn to punishment or extinction all below a certain presumed intellectual grade of development. Many are doubtful of the salvation of any except those in good standing in their own peculiar church. Not a few locate the danger line in risky proximity to themselves, feeling perfectly sure only of their own prospective wings and harps. Among the hundreds of conflicting creeds, the essentials of one are often the non-essentials of others, and the onlooker is often moved to say with Ethan Allen: "Any one is welcome to my chances."

In proving the natural origin of man and the development and true nature of his mind, and his place in Nature, the work of Science would have been well repaid if it had done nothing more than to remove from mankind the fear of the punishment of hell—and the monotonous adulations of heaven.

That the dumb animals are not entirely governed by instinct, but adapt themselves faithfully to circumstances, after the reasonable manner of men, might be illustrated by volumes of well attested anecdotes. I will only mention a few for the truth of which I can myself vouch. The dog, when the house was on fire—seeing a sick member of the family brought out, went back into the house, and was seen coming out carefully carrying the family cat.

Another dog showed pleasure at the sight of a well-known neighbor who came to borrow a saddle before the



family had arisen in the morning, and went with him cheerfully to the barn. The neighbor thought it would be all right to get the saddle without disturbing the family. The dog played with him in the barn but would not let him remove the saddle, and when he attempted to leave the barn without the saddle refused to let him go and held him a prisoner until his master came. Everything was right and pleasant so long as he did not try to leave the barn.

A certain cow would seldom jump a poor fence, and never a good one, but she would let down bars nicely, readily lift the hook with her horn and open gates from the outside, and the sliding door of her stable.

An ox would let down a corner of a zigzag rail-fence in the regular manner, get into mischief himself, but always kept the other animals from going through the gap. What was right for him was wrong for them; a rather human trait.

Cats are said to think more of places than they do of people, and often return to the old home after being moved away with the family. An exception to the rule came under my observation: the old cat found homes for two of her kittens with two of the neighbors, where, possibly under her instructions, they remained faithfully. A year later she and another full grown kitten were punished for a fault, and she and the kitten left and made their home at another neighbor's. About a year later the kitten returned to the old home to stay, but the old cat never returned except as an occasional welcome visitor.

Many animals have been known to sympathize with and help and care for others that were wounded or in distress, and sometimes this has been done for those belonging to other species. I knew a dog to thus serve

an injured cat, that in its turn availed itself of an opportunity to reciprocate the kindly act.

A friend of mine had a cat that took care for some time, in a motherly way, of a flock of little orphan chicks.

But enough of this, any one who knows animals will admit that they think and reason, and they often have a consciousness of good and evil. When they do right they feel proud and happy, and they show a sense of shame and regret when they do wrong or commit an error.

Prof. Huxley stated the simple truth when he characterized the attempt to "draw a psychical distinction" between the animal world and ourselves as "futile, and that even the highest faculties and feelings of the intellect begin to germinate in lower forms of life."

Human infants and youths pass through primitive mental states progressively as did their ancestors in the evolution of the race.

If man had fallen from a higher estate he might well be ashamed of his fall. But there is consolation and hope in the established truth that he has risen from the lowest planes of life, by slow gradations and persistent efforts, up to his present high position. In place of the crude and childish theory of the fall of man, still held by some ignorant or interested theologians,—Science has given us within the memory of men yet in full mental vigor—the established doctrine of the *rise of man*.

If it were a matter of choice—which would the wise man choose to believe? It is not a matter of choice, but of fact; belief is not knowledge, and happy are we to know that the truth is teeming with hope for the future evolution of the species to which we belong.



## CHAPTER XVII.

### THE END OF THE PLANET.

THE future fate of the Earth and its inhabitants is a question of unsurpassed interest. Before the present Scientific Era it could not have been discussed with any considerable degree of confidence. The flood of light now thrown on the orderly evolution of worlds in the past, enables us to project the powerful search-light of the fundamental truth of the uniformity of the operations of Nature into the darkness of the future. At last we have solid foundation for judging of the future by the past. Nothing could be more absurd than the supposition that unchangeable laws of nature might produce different results in the future from those already observed. It must then be taken for granted that the Earth will continue to cool off, and become by slow degrees nearer the low temperature of the space in which it is suspended. Looking backward or forward, our mental vision beholds the steady unbroken flow of the same great stream of progress. This must continue until the planet becomes less fitted than it now is to support its inhabitants.

As the highest development yet reached by our race has been in the temperate zone, we may safely predict that progress may continue until after the temperature along the equator shall become correspondingly reduced.

Then the great centers of civilization will be transferred from the valleys of the Thames, the Hudson, the

Seine and the St. Lawrence to those of the Amazon and the Congo. The ice-cap will permanently cover the Great Lakes and the English Channel. An arctic climate will extend over Great Britain, Northern France, and the northern states of the United States and Germany, slowly but surely spreading southward, while the southern polar ice-cap shall be spreading northward.

While these changes are taking place, thousands of generations will pass away, nations will rise and fall, perhaps civilizations perish and be renewed, islands will sink and new ones rise, and the contour of continents be greatly altered. The time past since the dawn of written history is not to be mentioned in comparison. Measured in years the time will run high up in the hundreds of thousands, and perhaps reach into the millions. This must be true even when the loss of heat by the Sun is also taken into the account.

Artificial heat will become more necessary as the periods of tens of thousands of years roll by. The time will come when the wood and coal supply shall be exhausted. Electric heating, generated by solar engines, water power—from streams, waves and tides, air motors, and perhaps heat generated by chemicals, will supply the deficiency.

The food supply may possibly be maintained by improved agricultural methods and the discovery of edible chemical products, and that for an indefinite length of time. As long as knowledge is not lost the human species need not suffer from cold and hunger, for the population will not be greater than can be subsisted in comfort.

With such an outlook there can be no reason why the evolution of mankind may not continue on to higher states of development. The final freeze that Science



guarantees is far more remote and therefore less discouraging for the prospects of the world, than the old-fashioned promise of a speedy destruction by fire. The uncertainty as to the fate of the living generation is removed, with all its ever-present expectation of the imminence of the final conflagration. The declaration, "Verily I say unto you that this generation shall not pass away before all these things shall be fulfilled," does not meet the case.

Science does not invite this generation to don its robes. It permits it to rest fully assured so far as life on the Earth is concerned—for countless generations to come. The new view not only has the lesser merit of being desirable, but the greater merit of being true.

Sooner or later a practical effect of the new departure will be a general, consistent, and systematized effort to make life on this planet better worth the living; for every man, woman, child, and animal on the face of the Earth. That there is urgent need of such improvement, those belonging to the less fortunate classes can strongly testify. When true and fearless Science shall have gained full supremacy the earnings of toil will be devoted to present good, instead of being wasted on vain and fleeting ambitions and future uncertainties.

That mankind will continue to improve mentally, morally and physically, for tens of thousands of years to come, those who enter into the secrets of evolution and understand its spirit will not question. There will be rapid transit and communication, and canals for irrigation and commerce closely interwoven, all over the habitable globe.

Finally, perhaps millions of years hence; the time will come when the great problem of the final extinction of the human species will have to be considered. All

the appliances of science and art will not avail to supply sufficient warmth and food. Mathematical calculations may then determine the generation with which human life on the planet must cease. Forewarned and forearmed, there will then be no children of men to freeze and starve. Wise counsels will prevail, and the race, like an aged philosopher, will retire from life without a struggle and without regret, with conscious rectitude and moral courage—bowing cheerfully to the inevitable.

Another picture might be drawn of the last men, steeped in superstition and selfishness, and swayed with passion, struggling against fate, praying in vain to their equally helpless gods, crowded, starving, freezing, digging deep in the ground for warmth, eating the last animals, seeking shelter and protection, and finally the last men like the first, with nails turned to claws by digging, covered with hair, with teeth and jaws projecting, wild-eyed, devouring each other, and ending their days in a frenzy of despair.

The evolutionist has every reason to believe that scientific and ethical culture will sustain the intellectual and moral strength of the dwindling inhabitants of the dying world, as at last life shall be voluntarily relinquished.

We have caught a glimpse of the unnumbered millions of years that dragged their weary length along before the Earth became fitted for habitation, and of the vast period of time that it has sustained life, and now we are ready to imagine the equally incomprehensible period that must needs elapse before the desolate and declining globe shall have ceased to exist as a planet. We have traced its birth, youth, maturity, and are now invited to follow its old age, death and disintegration.



Fortunately, we do not have to depend entirely on reason, or draw unwarrantably on imagination, for we have the Moon as an illustration of an advanced stage through which a cooling planetary body must pass. It teaches that the time will surely come when the Earth will become old and wrinkled ; its waters absorbed in the cold and cracked crust ; its atmosphere solidified or absorbed ; its surface rent by the sudden liberation of pent-up gases ; its day equal to its year ; the rocks crumbling under the strain of great changes in temperature ; its craters circular because there will be no wind to blow the volcanic dust,—a broad expanse of desert without a breathing thing or a green leaf upon its frozen surface.

After this stage shall have been reached, many millions of years must yet elapse before the central regions lose all their heat, and the globe becomes throughout as cold as the regions of space. The Moon, long since dead and decomposed, may be again united with its Mother Earth, both in their turn to drift to, or around, the cooling and dying Sun in the form of meteoric dust. The bodily tides caused by the attraction of the Sun and the larger planets will help to break up the cold and brittle mass.

It is a matter of common knowledge that when metallic substances lose their heat, they become brittle and are more easily broken to pieces. It is the energy developed by molecular motion that causes the particles to adhere in a mass. As the molecular activity stops, force in all its protean forms ceases to be manifested.

The process of disintegration would probably be aided by the conditions arising from the change of the Earth's orbit to a more elliptical form, until it finally becomes like the orbit of a comet or meteoric swarm ; the Sun aiding the dispersion.



It is fair to assume that the most attenuated forms of matter in interstellar space differ from other matter only in their vastly greater atomic distances. In the presence of active bodies like the Sun, these thinner gases would assist the chemical action and be condensed. This would cause a rapid inflow of them,—toward the point of least resistance, and for indefinite distances. All bodies, freely suspended in a state of equilibrium, whether large or small would be drawn the same way, and move with the current of atoms. This would also be a steady supply to feed the energy of the Sun. It would help to explain the causes of the attraction of gravitation, and support the theory that gravitation equals the difference in excitability of two bodies. It would also act as the medium for the transmission of light, heat, electricity and other radiating vibrations of solar energy. The supply of the attenuated medium would be kept up by the decomposition and consequent separation of the atoms of the dead worlds.

When all the components of the solar system become entirely cooled off, and their molecules lose their attraction of cohesion, active bodies in remote space, attracting, however distant and feebly, will cause the molecules and small bodies to drift farther apart. Any remaining motion of rotation would throw off non-adhering dust.

All internal motion of atoms and molecules having ceased, cohesion and gravitation end, and the particles fall asunder. When condensation ends, disintegration begins. Matter, ultimately separated, with all its force at rest, falls apart into nebulosities, such as have been previously described.

If gravitation is proportional to excitation, it would be at its highest at the culmination of the sun-period,



and lowest at the period of greatest atomic separation. Our knowledge of nebulosities, comets, meteorites, and the most attenuated forms of matter generally, is corroborative of this opinion. The attenuation, lack of points of condensation, and irregular outlines and shapes of the nebulosities, point strongly to a lack of gravitation, and this at the very point in the cycle of evolution and disintegration, where such a condition would be expected to obtain.

This brief and imperfect story of the *life history of a world*—began in a telescopic nebula, ran a period of say a billion of years and ends in a nebula—a complete circle.

It is only one revolution in Nature's eternal rounds. The steady march from nebula to nebula, from nebula to sun, from sun to planet, from planet to protoplasm, from protoplasm to man, from man to the culmination, from the culmination to the decline, from the decline to meteoric dust, from dust and atoms to nebula,—reaches a moment's rest, nay,—the movement continues without interruption—along the endless pathway of change.

In all the immeasurable changes of matter that have taken place in the 1,000,000,000 years, not an atom has been gained or lost, not a particle of its force has been augmented or diminished, and it continues its eternal journey with every potency intact.

Any day of the billion years an observer looking out upon the Universe, from any known star, would have seen worlds and systems in all stages of growth,—from birth and youth to old age and decay. It is in truth a "Wilderness of Worlds." The dust of the old is the substance and nourishment of the new. Any one day in the past, or in the future, is, and will be as much a day



THE BASELESS FABRIC OF A VISION.

And, like the baseless fabric of this vision,  
 The cloud-capp'd towers, the gorgeous palaces,  
 The solemn temples, the great globe itself,  
 Yea, all which it inherit, shall dissolve ;  
 And, like this unsubstantial pageant faded  
 Leave not a rack behind : we are such stuff  
 As dreams are made of, and our little life  
 Is rounded with a sleep.—*The Tempest*,  
 (Knight's Shakespeare, Act IV., Scene I.)



of beginning, or of creation,—as any other. In one sense every day is a day of creation.

Those who assume the existence of an intelligent power or creative force, back of, or outside of matter, have very little real insight into the working of Nature. They take the form for the substance. They measure Nature with a human micrometer as the standard. To them words and catalogues are greater than works and a thorough understanding of principles and substance. There is no evidence of the characteristic caprice of intelligence in the always uniform order of Nature. The Universe was not created, but always existed.

All things go through their natural changes and are the manifestations of the properties of the Universe, and contain in and of themselves, and ever have, and ever will, all there is of eternal energy. The infinite and eternal energy, in all its protean forms, is ever at one with matter, whether optically visible or not, and the energy is no more a product of matter than matter is of it; but simply a property of matter from which it cannot be separated. In this idea we have the true Monistic conception of the Universe. The material Universe is all there is of it, but in the broad sense—it is potent and living material.

## CHAPTER XVIII.

### A VISION OF PEACE.

RETURNING from our long journey in the *wilderness of worlds*, we are confronted by a most important practical question as to how the new facts can be made to promote the well-being of mankind—in this age of this world. In a sense these facts are old, but they have remained so long unrecognized, that to save them they must be treated like tender exotics. The weeds of superstition have overrun all the soil, and where seemingly subdued, are liable to spring up in spite of high cultivation. They are no less pernicious when they have a delicate growth,—for the soil beneath is full of their hungry roots. What superstition is to the ignorant, supernaturalism is to the educated. Even in the cultivated fields of Science insidious tares are yet found choking the wheat.

It is difficult for the mind to distinguish between belief and knowledge. It is easy to close the eyes and seem to think while at the same time we do not think a bit. Saying we understand is not understanding. Let us study these deep subjects while we are physically and mentally vigorous, and not wait for the semi-delirium arising from the approach of death. Our best mental action while in health should be our guide.

We should banish from our minds as far as possible all bias arising from heredity or early training. Let our judgment on these great questions be unwarped—and free from fear. Fear represses progress. Set people free and they will develop because they are free. The



responsibilities of freedom discipline the judgment and lead to wise conclusions. Boys never learn to swim until they gain access to the water. Liberty is the father of strong men. Free, brave and honest men will seek the truth for its own sake, and if without bias, sufficiently intelligent, and broad minded, will eschew all forms of supernaturalism. Study Science, in books and Nature, all your spare time, including Sundays, and the truth will make you free. Try it.

Those whose interests require that the people should be lulled to sleep, are forever preaching contentment. They deprecate unrest, well knowing that doubt, and dissatisfaction with things as they are,—are the main-springs of progress. Contentment would have retained the stage coach, as it has a still more worm-eaten theology. Instead of dependence upon others, and upon a dead and decaying past,—a living, active self-reliance is the one thing needful.

There is yet great and imminent danger that the higher civilization that Science has enabled us to enter upon, may be overthrown and lost to humanity for centuries to come, as was the case with the knowledge once centered at Alexandria. It has been well said that—"Eternal vigilance is the price of liberty." This is *doubly* true of religious liberty,—the slowest growth of all. It will never do to forget the cost of the moiety we enjoy. It is our duty to so do our part that our posterity may be saved from persecutions such as our ancestors passed through. The upward march of mankind, shackled with the chains of superstition, has left all along its trail—foot-prints stained with blood. The monuments of progress have been broken instruments of torture and the extinguished fires of fanaticism.

Science is sincere and tolerant. It has never perse-



cuted. Its hands are unstained. Let them always remain so. It has suffered wrong in silence. To escape persecution and conflict it has with Galileo often denied the truth. To escape ostracism, and the numerous intolerant aggressions of the Church it too often suppresses, and even denies the truth to-day. The common remark among confidential friends that—"we know these things to be true, but it is best to keep still; it will not do to come out openly and let it be known," is the expression of a rule of conduct, among a large and intelligent class. Reason is less aggressive than unguided emotion.

Religion is emotion without true knowledge of Nature, and where it begins Science ends. There is a higher emotion,—a higher poetry of Science, that is safe, tolerant, progressive and enduring. When this is reached general efforts will be put forth, without fear or favor, to redeem mankind from the intemperance of selfishness and superstition.

To unlearn the teaching of centuries, emphasized with the rack and torch, is a slow process. Bruno was burned *after* the discovery of America and the circumnavigation of the globe. We can remember when Tyndall incurred the displeasure of the Church by his Belfast Address, and a bishop, at Buffalo, warned his flock against Huxley, when he was an honored visitor at the meeting of the American Association for the Advancement of Science. Tyndall and Huxley were not the ones who were harmed; and a monument to Bruno stands on the spot where he suffered martyrdom.

The time is rapidly approaching when the opponents of supernaturalism will show an unwavering and unbroken front. In this age of rising Science, so-called orthodox religion owes the world an apology for its existence. It should abate its arrogance and presumption,



see itself as others see it, repent its past crimes and present sins, and voluntarily come down out of the saddle.

Its heaven has vanished into thin air. Its hell has disappeared with the foundations of the earth—and will eventually freeze up with the planet. Its prayers and pretended miracles have never interrupted the course of the law of cause and effect. Its persecutions are recoiling upon itself. Its every position taken in opposition to Science has been to it a boomerang. It has weakened morality by the insecurity of the foundations it offered. It is being forced to revise its theory of charities to accord with the teaching of Science. Its chronology and cosmogony are overthrown. The rib-story, and the fall of man, have vanished with the deluge and the dispersion of languages at Babel. Its emotional "experiences" are explained on physiological grounds. Its eternal life will hardly survive the death of the planet. Its ritual, baptism, trinity, symbols, immaculate conception, relics, etc., were no less significant to the Pagans than to it. Its kind of creative work has taken a rest. Its belief is not knowledge, nor works; and faith is credulity without proof. Its deity is an invisible and imaginary being, man made, modeled after a dead patriarch, chief or king, is the mysterious source of the "right" of kings to rule, and is waning with them. Science killed the devil. Science investigates, and the people think. Old creeds must follow the flint flakes. People are counting the cost and will demand the best.

It sums up that the whole theological structure is an artificial fabric, built on sand, in the infancy of the race, and to-day is a crumbling ruin. Intelligent theologians are thinking of what can be saved from the tumbling pile. The ruins of ancient temples still show, cut in stone, the images of the gods they symbolized. In time,

all deities will crumble to dust—whether carved in stone or impressed in the gray matter of the brain.

When the happy time shall come when men cease their efforts to appease the wrath of gods and demons, they will turn vast treasures of time, energy, love and money to the practical work of making life more useful and enjoyable. The cost to mankind of those relics of barbarism,—Superstition, Intemperance, Greed and War, would insure a life of comfort and reasonable leisure for every man, woman and child. All these evils will be gradually done away with, as man comes to fully realize his place in Nature, and learns to make the most of it. *The hope of the future rests with Science.*

There can hardly be a greater offence than the infusion through the schools, secular or theological, of the false notions into the minds of the young. It is the most effective way to retard the movement of the race toward its emancipation from dangerous errors,—and keep it in intellectual infancy and moral weakness. The unthinking, who acquire church habits of credulity, drift with the current of windy doctrine into the limbo of a paralyzing mythical belief.

The geocentric theory was long ago totally overthrown, and it is time for the theological system founded on it to go with it. The Greek mythology and the Jewish mythology are now classed as twins. Why should we place the first where it belongs, and continue a religious worship based upon the latter. It is as much a relic of pre-historic barbarism as the other. A rotten foundation makes the superstructure shaky and insecure.

If 999 phenomena are explained on natural principles, it is not necessary to produce direct proof as regards the remaining one, but it is fair to assume that the same laws apply to the thousand. We look to probabilities,



not may-be's,—to new facts, not old dreams. The bulk of the early speculations, reasoning from inadequate data, were much the same as the old idea that a portion of the intellect of men was located in the viscera. Doubtless a more frugal and temperate diet, and opportune doses of hepatic remedies, would have saved the world the inflictions arising from many dreaming stomachs and prophetic livers, like those of Daniel and John the Revelator.

Science has forever disposed of the idea that the Universe revolves around the Earth and the whole around the few elect. Is not eternal rest for the ego, and eternal utility for the material substance and its changing forces, better to believe than the doctrine of eternal happiness for the few and endless misery for the many? Better all cease from consciousness, become as they were before being born, than that even one should suffer the pangs of eternal torment. After all it is a question of facts,—not wishes.

We go to Nature for facts,—not to a self-contradicting revelation that does not reveal. A really divine revelation could as easily as not have been set up, stereotyped, and run off with a perfecting press, in all the languages and dialects, and left free of uncertainty, doubt or mistake; instead of the precious message being picked up by chance hearers, in a fragmentary way, passed from mouth to mouth, becoming mere hearsay, and finally reduced to writing a century or so after the events, when it had become a vague and somewhat inconsistent and questionable collection of traditions. However, in that case, the occupations of the expounders would have been gone, and their pay also.

There are few of us who have not inherited a prejudice in favor of the religion of our ancestors. Many of us had early training and environments, calculated to lean

us still further from the perpendicular in the same direction,—leaning toward error. A few are educated and accomplished, but get so little real insight into the nature of things as to never be able to discover that all their branches, vigorous as they may be, grow from a leaning trunk. Born and educated in a rut, the greater the education in the same direction the deeper the rut becomes, and the less hope there is of getting out of it. Such men are not to be condemned hastily, for they are not hypocrites, but honest and mistaken. Oh, that the rising generation might grow up straight! Like the even branches of a perfect tree, growing in the open, our youth should reach out for light equally in every direction. The powers of the darkness of superstition would then be without hope.

Organized church power is exercised to intimidate the timid or dependent, business men and politicians, to corrupt the text-books, to secure controlling influence on Boards of Education, to introduce religious instruction in secular schools supported by general taxation, to put a recognition of a religion in the Constitution of our free country, and bias and control the plastic and expanding minds of the young and inexperienced. Hard and persistent work is done to make error seem respectable and truth disreputable. But the Earth does move whether they deny it or not,—and they themselves evolve.

In these days, as in the days of Galileo, the steady march of scientific discovery goes on, the church denies, persecutes, sneers, falls behind, and finally has to start a fresh trot, limping along in the dust in a vain effort to catch up,—in the meantime shouting hysterically to the multitude, to make it appear that it has all the while been in the lead. Then come fine spun theories, and a new explanation of an old revelation, to try to reconcile